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IEEE Trans. Reliab. (1983), R-32(3), 282-288, Thomas
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(54) Abstract Title
A method of dealing under product warranty

(57) A method of dealing under product warranty in which the remaining warranty period of replacement products given to a maintenance store by a manufacturer is equal to that of defective products given to the manufacturer by the maintenance store. The method comprises the steps of establishing manufacturing information on the product, establishing a maintenance trade record and combining this record with the manufacturing information to form the latest information on the product, and determining the remaining warranty period according to the latest information. The manufacturing information may include service history, model, warranty, retailer and customer details. The maintenance trade record may include maintenance store, retailer and warranty period details. Each type or all of the information may be stored in bar code format.

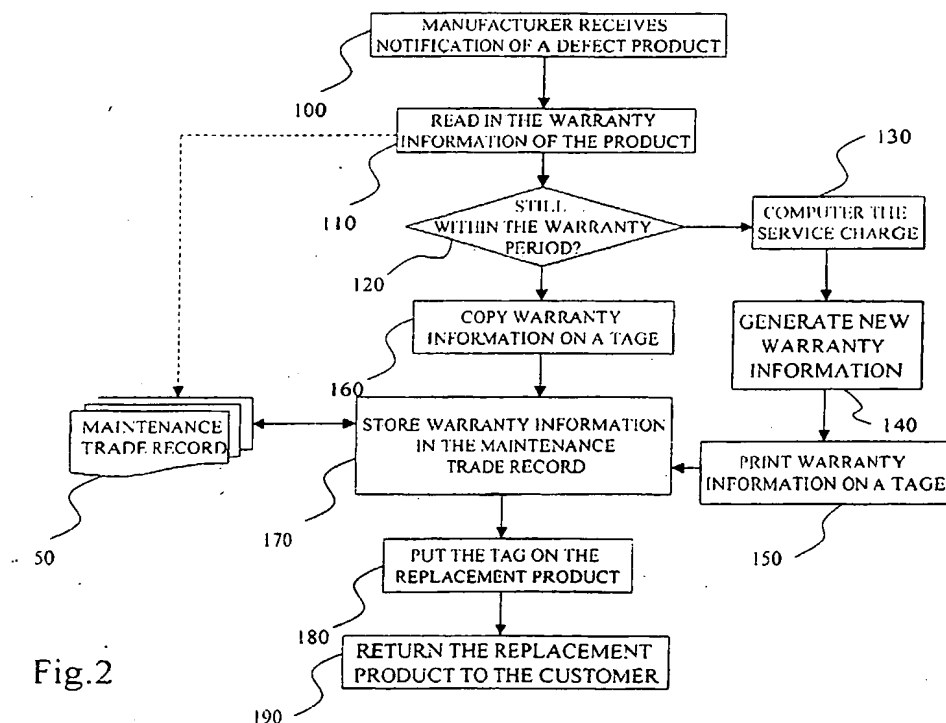


Fig.2

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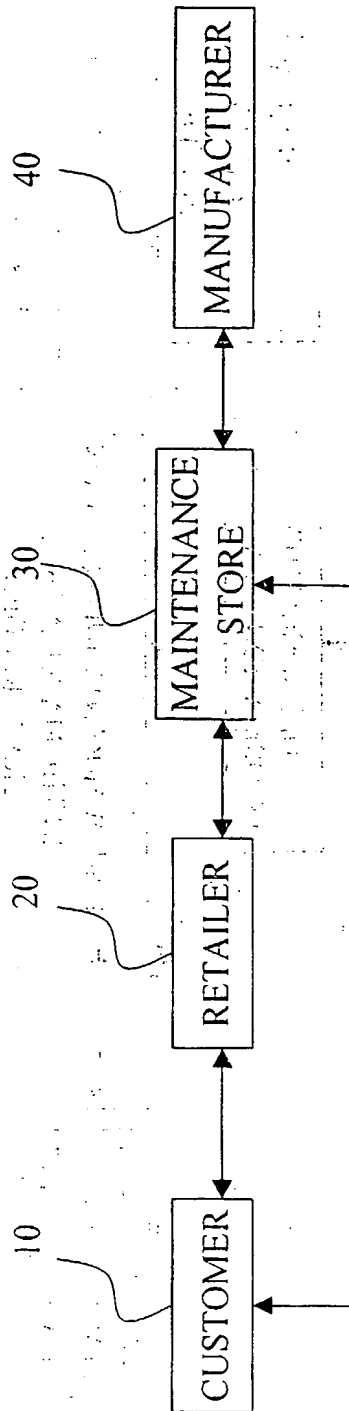


Fig. 1

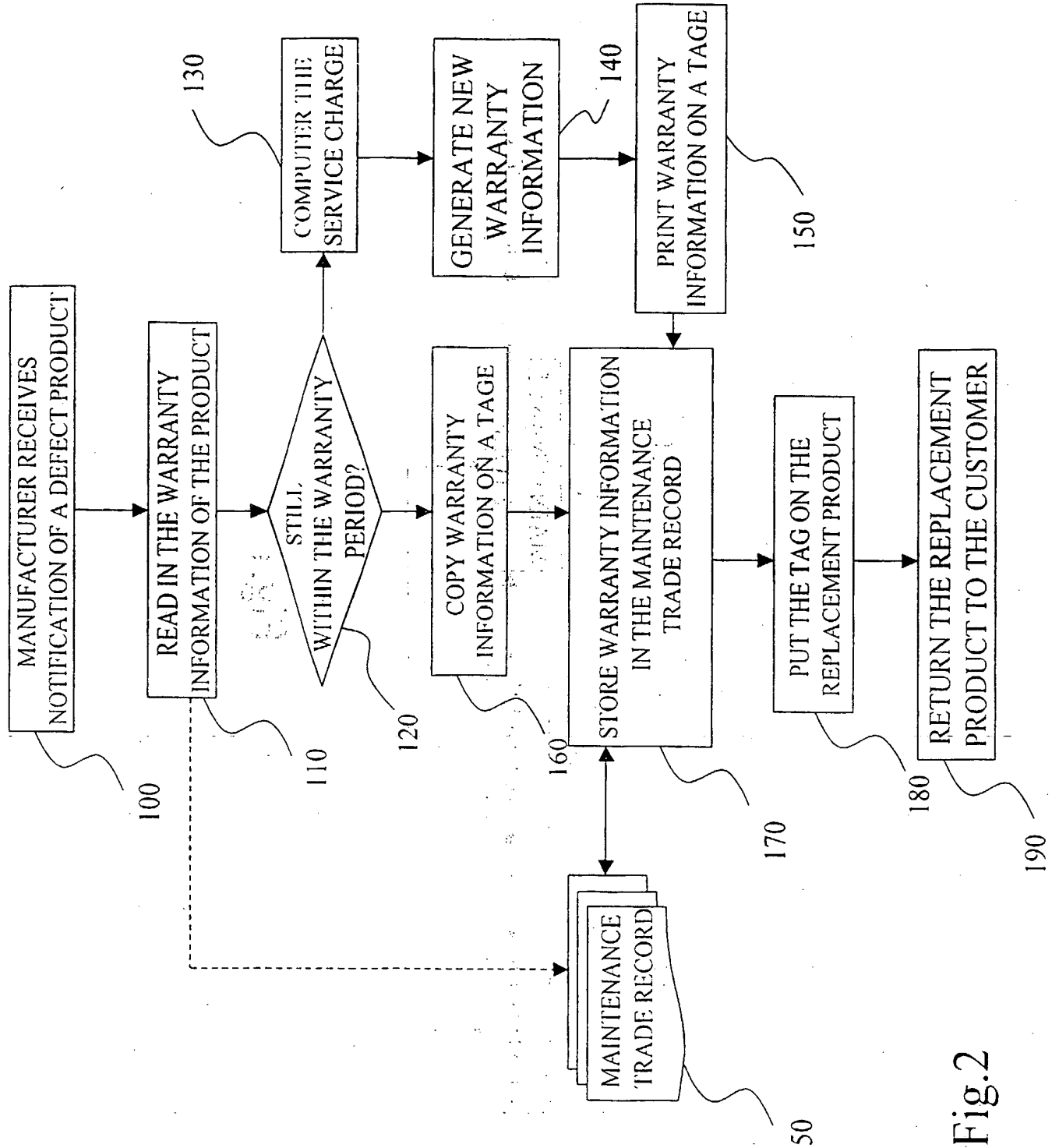


Fig.2

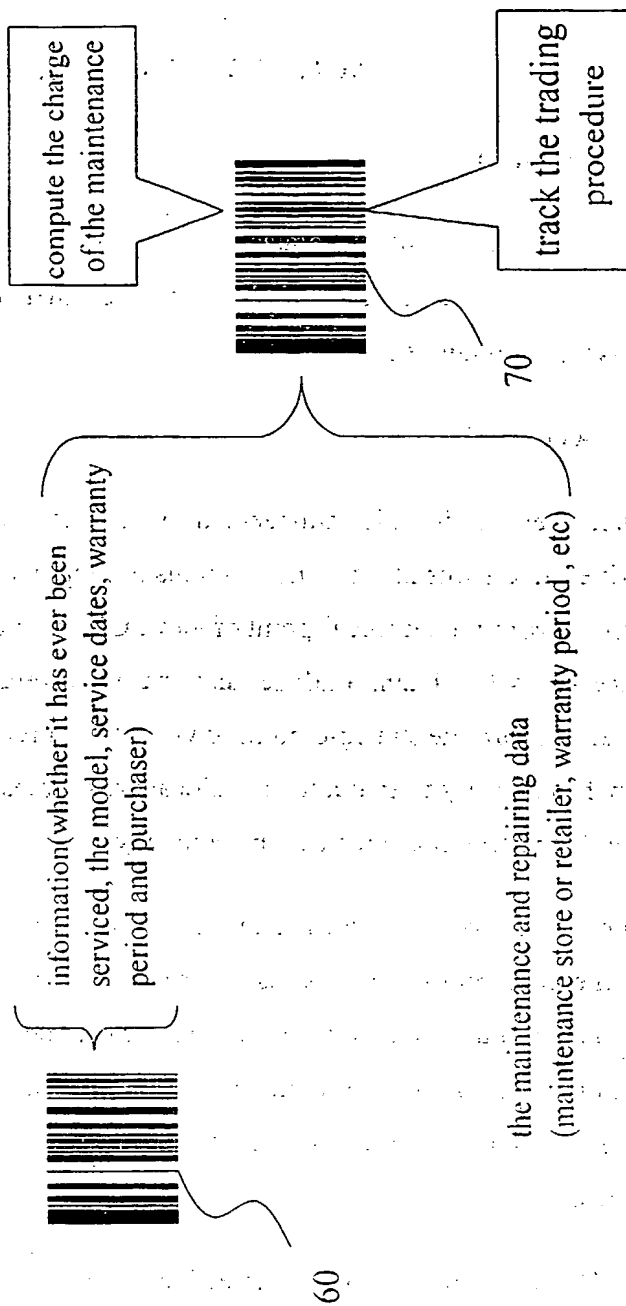


Fig.3

TRADING METHOD OF PRODUCT WARRANTY**BACKGROUND OF THE INVENTION****Field of Invention**

5 The present invention relates to a trading method of product warranty and, more particularly, to a trading method about the customer product warranty relevant to customer relationship management.

Related Art

10 Customer relationship management (CRM) is a technical strategy in business to convert data-driven decisions into business actions in response to and in expecting customer's actual reactions. From the technical point of view, CRM represents the necessary system and basic structure so as to obtain, analyze, and share the relations between all enterprises and the customers. From the strategic point of view, CRM represents a process, which is a customer relationship activity to evaluate and allocate resources in an organization to those customers who can bring the most profit to the company.

15 The loyalty of the customer relies on whether the product warranty trade method can satisfy the customer's actual needs. To satisfy the customer's actual needs, the manufacturer has to take into account the cost for maintaining the customer relationship management. In current product trading behaviors, one of the product warranties is to offer the customer the promise of free repair or replacement within a certain period of time. The following are some
20 examples:

1. The customer gives the defective product to the manufacturer (via a retailer or a maintenance center authorized by the manufacturer). The manufacturer returns the repaired product back to the customer. The service is free in the warranty period or the manufacturer charges some service fee otherwise. The drawback is that it takes a longer time to repair,

weakening the competitive power of the manufacturer.

2. Another type of the warranty service is replacement. That is, the manufacturer gives a product of the same model back to the customer at the same time when the customer turns in the defective product. This method is obviously more efficient than the previous one. The customer does not need to wait until the defective item gets repaired. Neither does he need to worry about the decrease of the warranty period during this repairing period. Yet this trading method still has its drawbacks:

A. The retailer warranty starting date of the product is the trading date.

B. The manufacturer warranty starting date is the manufacturing date of the product and the manufacturer provides free repairs during the warranty period.

C. For example, a customer purchases on 5/1/2000 a computer that contains a hard drive A (manufactured on 4/1/2000). The warranty period is one full year of free repairs starting from the purchase date, that is, the warranty duration is from 5/1/2000 to 4/30/2001. The customer may be charged for repairing after this warranty period. The warranty of the hard drive provided by the manufacturer is 13 months of free repairs. That is, repairs or maintenance of the hard drive between 4/1/2000 and 4/30/2000 is free. Any service after this period will be charged but another 13 months of free maintenance warranty will be granted afterwards.

D. Problems that may be encountered in practice:

Suppose the customer sends his computer to a maintenance store on 10/31/2000, and the computer is diagnosed to have a defective hard drive A. Since 6 months have passed since the purchase date, there should still be 6 months of warranty period. And the defective hard drive A has also 6 months of warranty left. Therefore, the manufacturer will replace the hard drive with

a good hard drive B for the maintenance store (and mark on the hard drive B that there are another 13 months of warranty.) The loss of the manufacturer is additional $13-6=7$ months of free maintenance.

5 Suppose that, after another 7 months, the customer sends the hard drive B to get repaired. In principle, one year of warranty has expired and some service fee will be charged. But the hard drive B is still within the extended 13-month warranty granted in the last service 7 months ago. Thus, the service is free for the customer, and this causes the manufacturer losses. Such situations continually happening may result in infinite warranty extension for
10 a product. If the manufacturer gets, say, 100 defective products at a time, it will cause far more times of losses.

In contrast, suppose the customer obtains three months of warranty since the purchase of the product, sends the hard drive A for repairs after one year (two years of warranty should be left) and is returned with a hard drive B with
15 13 months of warranty from the manufacturer. Then the rest warranty of the hard drive is just the 13 months, which is 11 months shorter than what the customer should have and becomes the customer's loss.

SUMMARY OF THE INVENTION

It is an object of the invention to complete warranty trading for a defective product by
20 replacing with a new one without influencing the quality or speed of the services provided by the manufacturer. This method can guarantee the rights for both the customer and the manufacturer.

The invention utilizes a data warehouse system with integrated data to provide such data as customers, products and maintenance so that these data can help answer problems that the
25 enterprise concerns with, provide decisions, advanced searches, selections and integration of relevant information for other purposes (such as services, sales, etc). The data warehouse of

the invention employs active searching. When source data change, the corresponding reactions are taken. In the respect of product warranty trading, the sum of the rest warranty period of the defective product given by the maintenance store to the manufacturer is equal to the sum of the rest warranty period of the replacing product given by the manufacturer to the maintenance store.

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow illustration only, and thus are not limitative of the present invention, and wherein:

FIG. 1 is a schematic view of a product repairing procedure;

FIG. 2 is a flow chart of the trading process for the product warranty according to the invention; and

FIG. 3 is a schematic view of a trading record for the product warranty according to a preferred embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a trading method concerning the product warranty. When a product purchased by a customer is out of order, the defective product can be replaced to complete the warranty trade without influencing the quality or speed of the

services provided by the manufacturer, protecting the rights of both the customer and the manufacturer.

FIG. 1 is a schematic view of a product repairing procedure. In a normal maintenance and repairing procedure of a defective product, the customer 10 sends the defective product to a retailer 20, the retailer 20 then sends it to a maintenance store 30 for repairing. The maintenance store check with the manufacturer 40 about the warranty data of the product (the data of, for instance, the warranty period, the specification of the product and the purchaser). Another method is that the customer 10 directly sends the defective product to the maintenance store 30 without the help of the retailer 20. Though they are slightly different, the warranty is the same.

FIG. 2 is a flow chart of the trading process for the product warranty according to the invention. The processing procedure of the product warranty trade is described hereinafter in detail:

At the same time when the customer purchases a product, the warranty information (the data of the warranty period, the specification of the product, the purchaser, etc) has to be recorded on a maintenance trade record 50, which is a reference for the product warranty in the future.

The defective product, according to the product warranty trade method, can be replaced to complete the warranty trade without influencing the quality or speed of the services provided by the manufacturer, protecting the rights of both the customer and the manufacturer. Since the manufacturer has to provide a certain period of warranty for its products, a new or used product in replacement of a defective product that is beyond its warranty period by the manufacturer after charging a service fee will be provided a new warranty period to the customer (the period depending upon the type of the product). The warranty information tagged on the replacement product will be the new warranty information. In general, when the manufacturer receives notification of a defective product

(step 100), it reads in the warranty information of the product from the maintenance trade record 50 (step 110). The product warranty information includes such data as the warranty period, the maintenance record, the product specification, and the purchaser. The warranty information can be stored in a bar code. Via the product warranty information it can be
5 determined whether the product is still within the warranty period (step 120). If it is beyond the warranty period, then the manufacturer computes the service charge (step 130) and transfers the warranty information of the defective product to the replacement product at the same time, generating new product warranty information (step 140). This method can ensure that the warranty of the product will not be changed and will not cause a loss to the
10 manufacturer. The new warranty information is printed on a tag, such as a bar code (step 150).

If the product is still within the warranty period, the warranty information is copied to a tag, such as a bar code (step 160) and the warranty information is recorded in the maintenance trade record (step 170). The tag is then put on the replacement product (step 180) and the
15 replacement product is returned to the customer (step 190). This completes the product warranty trade.

The following is a preferred embodiment of the invention to illustrate how the actual procedure of a product warranty trade operates. FIG. 3 is a schematic view of a trading record for the product warranty according to a preferred embodiment of the invention,
20 wherein the product trade that a customer purchases a computer is given as an example.

On 5/1/2000 the customer buys a computer which contains a hard drive A. The customer obtains a warranty period of one year starting from the date of purchase for the product. That is, the warranty period granted to the customer ranges from 5/1/2000 to 4/30/2001. Beyond the warranty period, a service fee will be charged to the customer. When the hard drive A
25 bought by the customer is out of order on 10/31/2000, the customer sends the computer to get repaired (he may send the computer to a maintenance store 30 directly or via a retailer 20). Through the information stored in a bar code 60 on the hard drive A, all information about the

hard drive A after it is made (whether it has ever been serviced, the model, service dates, warranty period and purchaser) can be scanned and copied to transfer the above information and the maintenance and repairing data (maintenance store or retailer, warranty period 5/1/2000 through 4/30/2001, etc) to a new information tag (a bar code 70) to be put on the replacement hard drive B and the case of the computer. The service product is then returned to the customer directly or via the retailer or maintenance store. Since the case bar code 70 on the computer and the bar code 70 on the replacement hard drive B store the same warranty information, this can ensure that the warranty period of the replacement item is the same as that of the original product. This trade will also be recorded at the same time of scanning. So both the customer and the manufacturer will not lose anything. The record can be the trade record between the manufacturer and the retailer or the maintenance store. This can facilitate the tracking and management of accounting so as to compute the charge of the maintenance and to track the trading procedure. On the other hand, when there are a large quantity of warranty products to be replaced between the manufacturer and the maintenance store, through the management and computation of the computer, it can be sure that the sum of the rest warranty period of defective products given to the manufacturer by the maintenance store is equal to that of the replacement products given to the maintenance store by the manufacturer.

The disclosed method can satisfy the actual needs of customers and can take into account the cost for maintaining customer relationship management (CRM). Therefore, there is a better grip and tracking for the customer loyalty.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

CLAIMS

What is claimed is:

1. A trading method concerning product warranty for ensure the sum of the rest warranty period of defective products given to the manufacturer by a maintenance store is equal to that of replacement products given to the maintenance store by the manufacturer, which method comprises the steps of:
 - establishing manufacturing information when a product is made and recording the manufacturing information on the product;
 - establishing a maintenance trade record when the product is sent for repairing and combining the maintenance trade record with the manufacturing information to form the latest information to be recorded on the product; and
 - determining the warranty period of the product according to the latest information.
2. The method of claim 1, wherein the manufacturing information is any combination selected from the group comprising whether it has ever been serviced, the model, the serviced maintenance or retailer, the warranty period and the customer.
3. The method of claim 1, wherein the defective product is replaced by an item of the same model.
4. The method of claim 3, wherein the item of the same model can be selected from the group comprising a new item and a used item.
5. The method of claim 1, wherein the maintenance trade record is any combination selected from the group comprising the serviced maintenance store or retailer and the warranty period.

6. The method of claim 1, wherein the manufacturing information is stored in a bar code.

7. The method of claim 1, wherein the maintenance trade record is stored in a bar code.

5 8. The method of claim 1, wherein the latest information is stored in a bar code.

9. The method of claim 1, wherein the defective product is sent to the manufacturer through a retailer.

10. The method of claim 1, wherein the defective product is sent to the manufacturer through a maintenance store.

10 11. The method of claim 1, wherein the latest information can provide the trade record between the manufacturer and the retailer or the maintenance store.

12. The method of claim 11, wherein the trade record is used to compute the charge for repairing and to track the trading procedure of the maintenance.

15 13. The method for trading method of product warranty substantially as hereinbefore described with reference to and /or substantially as illustrated in any one of or any combination of the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0021071.6
Claims searched: 1-13

Examiner: Matthew J. Tosh
Date of search: 21 May 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): G4A (AUXF, AUXX)

Int Cl (Ed.7): G06F 17/60

Other: ONLINE: ELSEVIER, EPODOC, IEL, INSPEC, JAPIO, WPI, TDB

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	IEEE Transactions on Reliability, Vol. R-32, No. 3, August 1983, pages 282-288, "Optimum warranty for non-reparable items", Thomas M. U...	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.